

REMARKS

Applicants respond hereby to the outstanding non-final Office Action mailed February 12, 2008, in the above-identified application. Each of independent claims 7-10, 12-15 and 17 are amended hereby. Claims 7-18 remain pending for prosecution hereinafter, where claims 1-6 were previously withdrawn.

Response To Rejection Under 35 USC §112, Second Paragraph

At paragraphs [02-10] of the non-final Office Action, the Examiner rejects each of pending claims 7-18 under 35 USC §112, second paragraph, for indefiniteness. Paragraph [04a] asserts that the ‘detecting device’ comprises the “extracorporeal device”, and that it detects a communication state of transmitting to, or receiving from, the “capsular in-body unit,” and that the claims do not make clear that the detecting device is part of the extracorporeal device.

In response, applicants have amended each of the independent claims to render clear the parts of the invention that comprise the extracorporeal device, substantially in accordance with the Examiner’s instructions in paragraphs [04a, 04b and 05]. For example, independent claim 7 now calls out:

A capsular medical system comprising:

a capsular in-body unit having a radio communication device which is inserted or swallowed to be introduced to the body cavity;

an extracorporeal device comprising having a communication device for communication with the in-body unit, which is arranged outside the human body; and

at least two antennas connected to the extracorporeal device and which are arranged near the body surface to communicate data to the in-body unit connected to the extracorporeal device,

the extracorporeal device eapsular medical system further comprising:

...
In response to the rejections at paragraph [06], applicants have amended claim 8 to render clear that the extracorporeal device synchronizes timing for switching the antenna for switching communication direction of the receiving and transmitting in accordance with a communication state detected by the detecting device at the predetermined time interval set by the timer.

Applicants have further amended claim 8 to render more clear that the scope of the switching device, and to address the issues raised with the phrase “the antenna switching device performs the operation,” as mentioned above with respect to applicants’ response to paragraphs [04a, 04b and 05].

In response to the rejections at paragraph [07], applicants have amended claim 9 to address the issue raised with the phrase “the detecting device performs the operation,” and to address the issue raised with respect to the (now cancelled) recitation that the antenna is switched “at a switching timing synchronized with switching of communication direction,” and “when a communication state is deteriorated;” and the instant amendments to claim 9 further make clear that the extracorporeal device synchronizes timing ...

In response to the rejection at paragraph [08], applicants have amended claims 10-12 and 15-18 in a way that is substantially similar to the amendments to claims 8 and 9, as discussed above.

In response to the rejection at paragraph [09], applicants have amended claim 13 in a way that is substantially similar to the amendment of claim 8.

In response to the rejection at paragraph [10], applicants have addressed the problem with claim 14 by amending claim 14 in a way that is substantially similar to the amendment of claim 8.

As amended, independent claims 7-10, 12-15 and 17 are believed to fully comply with 35 USC §112, second paragraph, and applicants respectfully request withdrawal of the rejection of claims 7-18 thereunder.

Response To Rejection Under 35 USC §102

At paragraphs [11-25] of the outstanding final Office Action, the Examiner rejects claims 7-18 under 35 USC 102(a) as anticipated by US Published Patent Application No. 2003/0085994 to Fujita, et al. (Fujita).

At paragraphs [13], the Examiner asserts that Fujita discloses a capsular medical system comprising:

a capsular in-body unit (“capsule endoscope 3” [0074]) having a radio communication device (“antenna 23,” [0074]) which is inserted or swallowed to be introduced to the body cavity;

an extracorporeal device (“external unit 5,” [0070]) having a communication device for communication with the in-body unit, which is arranged outside the human body; and

at least two antennas (multiple antennas 11a to 11d,” [0070]) which are arranged near the body surface to communicate data to the in-body unit connected to the extracorporeal device,

a switching device (“antenna switch 45,” [0071]) which switches the antennas;

a detecting device (“receiving circuit 33,” [0075]) which detects a communication state including a transmitting state and a receiving state.

Claim 7

At paragraph [14], the Examiner asserts with respect to independent claim 7, that Fujita's extracorporeal device synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting in accordance with the detected communication state of one of receiving and transmitting. The Examiner further asserts that Fujita discloses transmitting and receiving strength data via sequentially switched antennas 11a, 11b, 11c and 11d [0073; 0075], and that at a time when the extracorporeal device stops transmitting via antenna 11d, switching to begin receiving at antenna 11a, thereby synchronizing the antenna switching and communication direction.

In response, applicants have amended the wherein clause of independent claim 7 as follows:

wherein the extracorporeal device synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting in accordance with a detected communication state detected by the detecting device at the predetermined time interval set by the timer of one of receiving and transmitting.

Fujita's capsular medical system inherently operates the switching device at a switching timing in accordance with the detected communication state [0075]. Applicants respectfully assert that Fujita's receiving circuit 33 [0075] is not equivalent to the claim 7 capsular medical system, as amended. Applicants, therefore, respectfully request the withdrawal of the rejection of independent claim 7 under Section 102(a) in view of Fujita.

Claim 8

At paragraph [15] of the outstanding Office Action, the Examiner asserts with respect to independent claim 8 that Fujita discloses an antenna selecting device [0075] that performs the “operation” at the time interval set by a timer (“sequentially selected,” [0073]; “repeated at intervals of proper period of time.” [0083]).

In response, applicants have amended the wherein clause of independent claim 8 as follows:

wherein the extracorporeal device synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting in accordance with the communication state detected by the detecting device and at the predetermined time interval set by the timer, to control the antenna selecting device to select the antenna.

Fujita’s description at paragraph [0073] merely describes how transmissions are sent through the send/receive switch using antennas 11a-11d. Fujita does not teach or suggest synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting in accordance with the communication state detected by the detecting device, and at the predetermined time interval set by the timer in order to control the antenna selecting device to select the antenna, as claimed. Fujita does not disclose a capsular medical system so constructed. Applicants, therefore, respectfully request withdrawal of the rejection of amended independent claim 8 under Section 102(a) in view of Fujita.

Claim 9

At paragraph [16] of the non-final Office Action, the Examiner asserts with respect to independent claim 9 that Fujita discloses that its detecting device performs the operation at the time interval set by a timer and when a communication state is deteriorated, the antenna is switched (“the antenna 11i, through which the highest radio wave strength data can be received, must be changes,” [0083]).

In response, applicants have amended the independent claim 9 as set forth above. The claim now calls out a timer, which is set to a predetermined time interval. The detecting device as amended now reads: a detecting device which detects, at the predetermined time interval, a communication state including transmitting state where the extracorporeal device carries out transmission to the in-body unit, and a receiving state where the extracorporeal device carries out reception from the in-body unit. Applicants have also amended the wherein clause to read: wherein the extracorporeal device synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting at the predetermined time interval set by the timer, and when operation for connection for the transmitting or receiving is not established, the antenna selecting device is controlled to select the antenna.

Fujita at least does not disclose the claimed detecting device and antenna selecting device. Applicants, therefore, respectfully request the withdrawal of the rejection of claim 9 under Section 102(a) in view of Fujita.

Claim 10

At paragraph [17] of the outstanding Office Action, the Examiner asserts with respect to independent claim 10 that Fujita comprises a number of n antennas whose receiving and transmitting states are checked smaller than a number N of attached antennas when switching the antennas, and it anticipates under 102(a).

Applicants' respectfully disagree for at least the following reasons. Independent claim 10 as amended recites in pertinent part:

a detecting device which detects, at the predetermined time interval, a communication state including a transmitting state where the extracorporeal device carries out transmission to the in-body unit and a receiving state where the extracorporeal device carries out reception from the in-body unit;

wherein the detecting device detects communication states of antennas of a predetermined number less than a number of all of the plurality of antennas; and wherein the extracorporeal device synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting in accordance with the communication state detected by the detecting device and at the predetermined time interval set by the timer.

While Fujita may disclose that a number n of antennas whose receiving and transmitting states detected is less than a number N of all the attached antenna at the time of switching, Fujita does not disclose a detecting device, at timer and an antenna selecting device as claimed, further qualified by the wherein clauses. Applicants, therefore, respectfully assert that claim independent 10 is not anticipated by Fujita, and request withdrawal of the claim 10 rejection thereunder.

Claim 11

At paragraph [18] of the outstanding Office Action, the Examiner asserts with respect to dependent claim 11 that Fujita discloses that the antenna whose receiving and transmitting state is checked, and is determined based on the antenna that currently receives data [0075]. In response, applicants respectfully assert that claim 11, which depends from independent claim 10, is patentable for at least the reasons set forth for the patentability of independent claim 10. Applicants, therefore, respectfully request reconsideration and withdrawal of the claim 11 rejection under section 102(a) in view of Fujita.

Claim 12

At paragraph [19] of the outstanding Office action, the Examiner asserts with respect to independent claim 12 that Fujita discloses a storing device for storing, receiving and transmitting state (“memory 47,” [0072]), wherein, when the receiving strength data is not obtained upon operating the antenna selecting device, the antenna which can communicate data is checked is selected to ensure the communication (antenna 11i,” as noted above).

Applicants have amended claim 12 to make clear that the storing device as claimed stores the communication state detected by the detecting device, and wherein the extracorporeal device synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting at the predetermined time interval set by the timer, and when the receiving strength data is not obtainable in the selecting of the antenna by the antenna selecting device, the extracorporeal device refers to the communication state stored in the storing device to control the antenna selecting device to select the antenna that is assured to be communicable.

Fujita's memory 47, as distinguished, is for storing received data from receiving circuit 33, as amended. Fujita does not disclose a storing device, and the limitations comprising the wherein clause. Hence claim 12 is not unpatentable in view of Fujita under Section 102(a). Applicants, therefore, respectfully request withdrawal of the claim 12 rejection under Section 102(a) in view of Fujita.

Claim 13

At paragraph [20] of the outstanding Office Action, the Examiner asserts with respect to independent claim 13 that Fujita discloses the antenna-selecting device that operates at the time interval set by the timer, referring to the above rejections.

In response, applicants have amended claim 13 so the detecting device now reads:

a detecting device which detects, at the predetermined time interval, a communication state including a transmitting state where the extracorporeal device carries out transmission to the in-body unit and a receiving state where the extracorporeal device carries out reception from the in-body unit, and which controls the antenna selecting device to select the antenna in accordance with the communication state detected by the detecting device and at the predetermined time interval set by the timer.

Fujita at least does not disclose a detecting device as claimed. Hence, and for at least the reasons set forth above, claim 13, therefore, is not unpatentable under Section 102(a) in view of Fujita. Applicants, therefore, respectfully request the withdrawal of the claim 13 rejection under Section 102(a) in view of Fujita.

Claim 14

At paragraph [21] of the outstanding Office Action, the Examiner asserts with respect to independent claim 14 that Fujita discloses a detecting device that performs the operation at the time interval set by the timer, and switches when a communication state is deteriorated, the Examiner referring to his prior arguments for preceding claims.

In response, applicants have amended independent claim 14 as set forth above. The claim now calls out a timer, which is set to a predetermined time interval. The detecting device as amended now reads: a detecting device which detects, at the predetermined time interval, a communication state including transmitting state where the extracorporeal device carries out transmission to the in-body unit, and a receiving state where the extracorporeal device carries out reception from the in-body unit, and which controls the antenna selecting device to select the antenna when operation for connection to the transmitting or receiving is not establishable.

Fujita at least does not disclose such a detecting device. Independent claim 14, therefore, is not anticipated by Fujita, and applicants respectfully request the withdrawal of the rejection of claim 14 in view of Fujita under Section 102(a).

Claim 15

At paragraph [22] of the outstanding Office Action, the Examiner asserts with respect to independent claim 15 that Fujita discloses having a number n of antennas whose receiving and transmitting states are checked smaller than a number N of attached antennas when switching the antennas, anticipating the claim under 102(a).

Applicants' respectfully disagree. Independent claim 15 as amended recites in pertinent part:

a detecting device which detects, at the predetermined time interval, a communication state including a transmitting state where the extracorporeal device carries out transmission to the in-body unit and a receiving state where the extracorporeal device carries out reception from the in-body unit;

wherein the detecting device detects communication states of antennas of a predetermined number less than a number of all of the plurality of antennas; and wherein the extracorporeal device synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting in accordance with the communication state detected by the detecting device and at the predetermined time interval set by the timer.

While Fujita may disclose that a number n of antennas whose receiving and transmitting states detected is less than a number N of all the attached antenna at the time of switching, Fujita does not disclose an antenna detecting device, or an antenna selecting device, as claimed, further qualified by the wherein clauses. Applicants, therefore, respectfully assert that independent claim 15 is not anticipated by Fujita under section 102(a), and request withdrawal of the claim 15 rejection thereunder.

Claim 16

At paragraph [23] of the outstanding Office Action, the Examiner asserts with respect to dependent claim 16 that Fujita discloses that the antenna whose receiving and transmitting state is checked is determined based on the antenna, which currently receives data. In response applicants respectfully assert that claim 16, which depends from claim 15, is patentable for at

least the reasons set forth for the patentability of claim 15. Applicants, therefore, respectfully request reconsideration and withdrawal of the rejection of claim 16.

Claim 17

At paragraph [24] of the outstanding Office action, the Examiner asserts with respect to independent claim 17 that Fujita discloses that when data on the receiving strength is not obtained upon operating the antenna selecting device, the antenna that can communicate data is checked and is selected to ensure the communication (antenna 11a).

Applicants have amended claim 17 to make clear that the storing device as claimed stores the communication state detected by the detecting device, wherein the detecting device detects communication states of antennas of a predetermined number less than the number of all of the plurality of antennas, and wherein the extracorporeal device synchronizes timing for switching the antenna with timing for switching communication direction of the receiving and transmitting at the predetermined time interval set by the timer, and when the receiving strength data is not obtainable in the selecting of the antenna by the antenna selecting device, the extracorporeal device refers to the communication state stored in the storing device to control the antenna selecting device to select the antenna that is assured to be communicable.

Fujita at least does not disclose a storing device, and the limitations comprising the wherein clause. Moreover, applicants do not find that Fujita's disclosed structure determines which antenna can communicate data ("checks"), and is then selected. Fujita's memory 47, as distinguished, is for storing received data from receiving circuit 33. Hence claim 17 is not unpatentable in view of Fujita under Section 102(a). Applicants, therefore, respectfully request withdrawal of the claim 17 rejection under Section 102(a) in view of Fujita.

Claim 18

At paragraph [25] of the outstanding Office Action, the Examiner asserts with respect to dependent claim 18 that Fujita discloses that the detecting device selects one of at least two antennas arranged to communicate data to the in-body unit connected to the extracorporeal device, via the switching device, in response to the detected communication state corresponding to movement of the capsular in-body unit. I

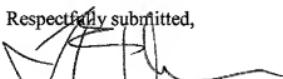
In response applicants respectfully assert that claim 18, which depends from independent claim 7, is patentable for at least the reasons set forth for the patentability of independent claim 7. Applicants, therefore, respectfully request reconsideration and withdrawal of the claim 18 rejection under section 102(a) in view of Fujita.

Conclusion

Applicants respectfully assert, therefore, that each of pending claims 7-18 are patentable under 35 USC § 102(a) in view of Fujita for at least the reasons mentioned, and request withdrawal of the rejection of claims 7-18 in view of Fujita thereunder. Accordingly, applicants urge the Examiner to reconsider the rejection of claims 7-18, allow the claims and allow the application to issue.

If the Examiner believes that a telephone conference with applicants' attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully submitted,



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